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Concise report on world population monitoring, 2003: population, education and development

Report of the Secretary-General

Summary

The present report has been prepared in accordance with the terms of reference of the Commission on Population and Development and its topic-oriented prioritized multi-year work programme, which was endorsed by the Economic and Social Council in its resolution 1995/55. The Commission, in its decision 2000/1, decided that the special theme for the Commission at its thirty-sixth session in the year 2003 should be "Population, education and development".

The report provides a summary of recent information on selected aspects of population, education and development. The preliminary, unedited version of a larger full report is available as a working paper in document ESA/P/WP.179. This report covers topics such as trends in population, education and development; education and entry into reproductive life; the interrelationships between education and fertility; education, health and mortality; and education and international migration. The report finds that education plays a key role in national development, besides being a prime component of individual well-being. Through education, individuals are empowered to have choices and make decisions, in such areas as work, place of residence, family size, health and lifestyles, and personal development. When aggregated, these individual choices and decisions have dramatic consequences for a population.

The report was prepared by the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. The Population Division acknowledges the contribution from the United Nations Educational, Scientific and Cultural Organization (UNESCO) Institute for Statistics which provided input for the preparation of section I.

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Introduction

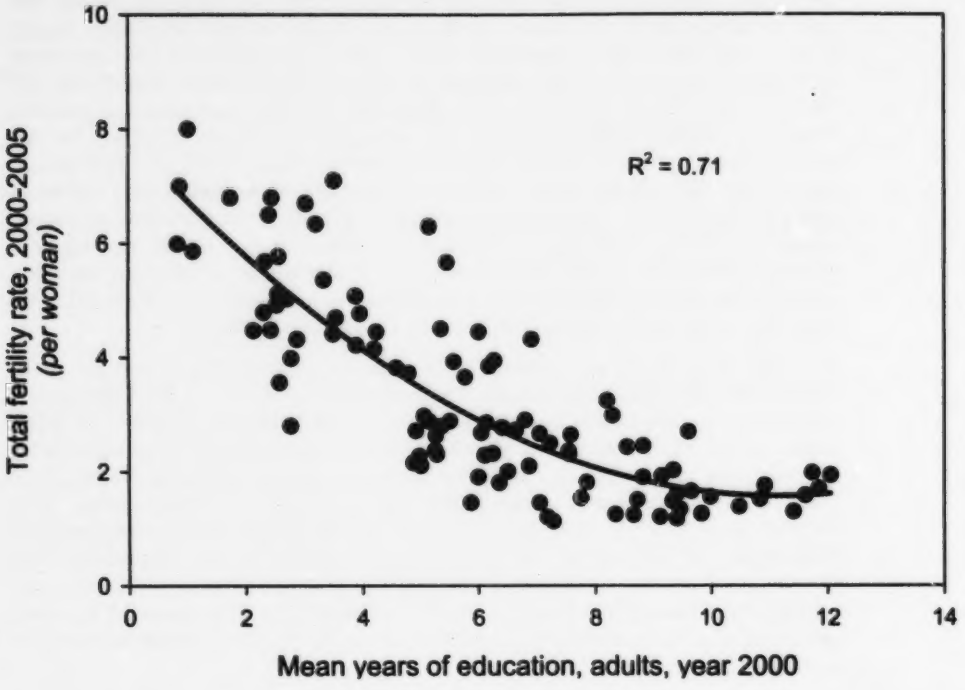
1. From the founding of the United Nations, education has been recognized as one of the essential underpinnings of human development and societal progress. The right to education is proclaimed in the Universal Declaration of Human Rights (1948),[1] and education's importance with respect to population and individual development has been strongly endorsed in major United Nations conferences and summits. The World Conference on Education for All, convened in Jomtien, Thailand, in 1990, established goals and strategies to achieve Education for All (EFA). Recently, at the World Education Forum (Dakar, 2000), the Millennium Summit in 2000 and the special session of the General Assembly on children in 2002, the international community of nations explicitly recognized that education, especially primary schooling, is critical for achieving social and demographic progress, sustained economic development and gender equality. Achieving universal primary education and eliminating gender disparities in education are among the key objectives of the United Nations Millennium Declaration (2000).[2]

2. The importance of education has also been stressed in the series of international population conferences. The Programme of Action of the International Conference on Population and Development (1994)[3] adopted quantitative goals related to education, endorsing the Jomtien EFA goal regarding elimination of illiteracy, and also calling for universal access to primary education before 2015 (para. 11.6) and elimination of the gender gap in primary and secondary education by 2005 (para. 11.8). In 1999, the key actions for the further implementation of the Programme of Action of the International Conference on Population and Development[4] further specified an intermediate goal of achieving by 2010 a net primary school enrolment ratio for children of both sexes of at least 90 per cent (para. 34), and also noted a particular need for improving the retention rate of girls in primary and secondary schools (para. 34).

3. In the field of population studies, it has long been recognized that education is strongly related to a broad range of demographic behaviours. The spread of education throughout a population has been shown to be of central importance for the long-term demographic transition from high to low levels of fertility. Caldwell (1980), in particular, has maintained that high levels of fertility would nowhere persist for long once a society had achieved "mass education", that is to say, once a large majority of children were sent to school. More recent trends have generally borne this out (Lloyd, Kaufman and Hewett, 2000).

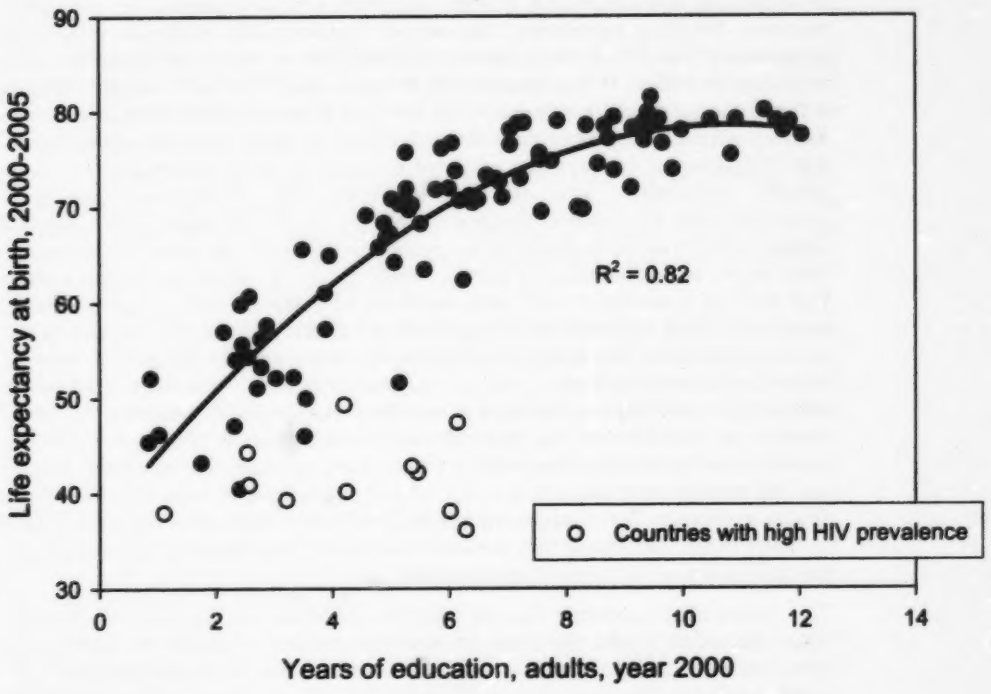
4. At present, educational attainment is strongly related to differences between countries in levels of fertility and mortality (figures I and II). In general, such cross-national associations may reflect the effects of education on demography, and the effects of demographic factors on education, as well as the joint effects of other factors that may separately influence both education and demographic variables. In fact, a substantial body of research has been directed towards examining each of these important relationships, and it is generally accepted that education both influences and, over time, is influenced by demographic factors.

Figure I
Total fertility rate, by mean years of education



Sources: R. J. Barro and J. Lee, *International Data on Educational Attainment: Updates and Implications*, CID Working Paper, No. 42 (Cambridge, Massachusetts, Harvard University, 2000); and *World Population Prospects: The 2000 Revision*, vol. I, *Comprehensive Tables* (United Nations publication, Sales No. E.01.XIII.8 and Corr.1).

Figure II
Life expectancy at birth, by mean years of education



Sources: R. J. Barro and J. Lee, *International Data on Educational Attainment: Updates and Implications*, CID Working Paper, No. 42 (Cambridge, Massachusetts, Harvard University, 2000); and *World Population Prospects: The 2000 Revision*, vol. I, *Comprehensive Tables* (United Nations publication, Sales No. E.01.XIII.8 and Corr.1).

Note: Countries with estimated HIV prevalence above 10 per cent for adults aged 15-49 are shown separately and are not included in the regression equation.

5. The present report provides a review and update of the relationships between education and the main demographic areas, with attention to entry into reproductive life; fertility, desired family size and family planning; mortality and health; and migration, with a focus on international migration. Also examined is progress towards meeting the goals of Education for All.

I. Trends in population, education and development

6. While linkages among population, education and development have long been recognized, the priority accorded to these relationships has varied. In the decades following the Second World War, education was a high priority for many Governments, and educational systems underwent a rapid expansion. By the 1980s, however, faltering economies, debt-service burdens and structural adjustment programmes had led some countries to reduce the provision of public services, including education. It was generally in the poor countries that education budgets suffered the most, and enrolment ratios declined in some cases, especially in sub-Saharan Africa. At the same time, the understanding of the process of development was also changing in ways that accorded education a more prominent role. In the decades immediately after the Second World War, professional economists concerned with development focused mainly on growth in output (gross national product (GNP)) as the indicator of progress, and especially on industrialization and trade issues as determinants of growth. While there was surely a consensus that a high level of economic development could not be achieved with a largely illiterate populace, formal economic models generally paid little attention to "human capital" as a determinant of economic growth; however, this gradually changed. A growing number of economists found evidence that human capital — particularly education and health — had important economic benefits society-wide. Beyond this, the whole concept of development evolved, shifting from a narrow vision to one that encompassed the broader relationships among socio-economic development, poverty and the environment. There was also a greater recognition that, over and above its strictly economic effects, education helped foster progress towards other goals such as better health and longer life, personal development, participation in civil society and access to a wider range of opportunities.

7. Research on economic rates of return to education generally seeks to measure either the social returns that accrue to the entire society or the private returns that accrue to individuals. At the household level, research has established that education boosts individual incomes in a wide variety of settings, although the size of the return varies over time and place. Psacharopoulos and Patrinos (2002), reviewing numerous studies in countries at all levels of development, found an average private return to primary education of 27 per cent. Where traditional practices or other factors limit the participation of women in the labour force or constrain the types of employment in which women can engage, the economic return on investment from female education is reduced. Overall, however, women receive a higher return on investment in schooling than men do.

8. As regards social returns, with few exceptions recent studies have confirmed the significant positive association between schooling, and productivity and economic growth. Other studies have looked at the positive spillover effects beyond education's impact on the growth of gross domestic product (GDP) — effects that are not normally taken into account. The greater productivity of individual workers has also been found to enhance the productivity of co-workers, while higher levels of worker education facilitate the discovery, adaptation and use of more efficient production processes. Mingat and Tan (1996) concluded that rates of return varied not only by level of schooling but also by level of development. For low-income countries, primary education was the best investment, while in middle-income countries, where primary education already tends to be more widely available,

increased investment in secondary education yielded the highest social returns. Among high-income countries, returns were greatest for tertiary education. This suggests that in low-income settings, primary education deserves priority in the allocation of resources. The World Bank (1995) has argued that, based on such evidence, many countries have misallocated spending between education subsectors, with a disproportionate share of resources going to secondary and university education.

9. Other studies have investigated the role of primary education in reducing poverty and income inequality. The overwhelming conclusion of these studies was that primary education is a potent means of reducing poverty and inequality, with particularly marked benefits for the poorest segments of society.

10. A number of other benefits from investments in education and training have been identified. For example, studies have found that primary education contributes to better natural resource management, and more rapid technological adaptation and innovation; and that education is linked with the greater diffusion of information, which is crucial for boosting productivity.

11. What is the impact of family size on the amount of education children receive? Studies of the relationship have often found effects that were not statistically significant, but when effects were significant, children in large families usually had lower educational participation and attainment. Results suggest that this relationship is weak in comparison with the relationship between amount of education and other factors — household poverty, for instance — that independently affect children's schooling. The relationship between family size and investment in children has been found to vary according to level of development, phase of the demographic transition, level of government social expenditures and cultural factors. In some countries, unwanted births have been found to reduce educational attainment and to be a major reason that girls drop out of school.

12. How have developing countries fared in providing education in the face of rapid population growth? Despite demographic pressures in many developing countries during the period 1960-1980, school enrolment grew at an unprecedented pace, enrolment ratios rose and class sizes generally declined. Schultz (1987) found that, controlling for per capita income, enrolment ratios were no lower in countries where the proportion of population of school age was high. Effects of the rapid growth in the school-age population on school quality are less clear. The cross-national evidence suggests that school expenditures generally do not increase in response to an increase in the size of the school-aged cohort, in other words, spending per school-age child tends to be lower where the "demographic burden" is greater. The study by Schultz found that where the school-age population was relatively large, there was a tendency for teacher-to-student ratios to be somewhat lower, and teacher salaries and public expenditures per child were substantially lower. The study of Mingat and Tan (1998) based on data for the period 1975-1993 found that richer countries provided more resources for education per school-age child, and that their smaller demographic burden contributed between 17 and 32 per cent of richer countries' advantage. There are also examples of shorter-term surges in child cohort size inducing dramatic school crowding and teacher shortages, for example, during the baby boom in the United States of America during the 1950s and 1960s.

Trends in the total and school-age population

13. Efforts to expand access to education have coincided with an extraordinary growth in population numbers. No century had witnessed such rapid population growth as did the twentieth century. From an estimated 1.6 billion inhabitants in 1900, the world population rose to 6.1 billion at the end of the century, with most of the increase occurring after 1950. This rapid growth was propelled by dramatic declines in mortality, especially in the less developed regions. Because the fall in mortality began before the onset of fertility decline in most regions, the pace of population growth increased. World population has grown to nearly 2½ times since 1950 with a peak growth rate of 2.04 per cent per year during 1965-1970 and peak annual increments of 86 million persons during 1985-1990 (table 1).

Table 1
World population by major area, 1950-2050

Major area	*1950*	*1975*	*2000*	*2025*	*2050*
			Population (millions)		
World	2 519	4 066	6 057	7 937	9 322
More developed regions	814	1 048	1 191	1 219	1 181
Less developed regions	1 706	3 017	4 865	6 718	8 141
Africa	221	406	794	1 358	2 000
Asia	1 399	2 397	3 672	4 777	5 428
Europe	548	676	727	684	603
Latin America and the Caribbean	167	322	519	695	806
Northern America	172	243	314	384	438
Oceania	13	21	31	40	47

Source: *World Population Prospects: The 2000 Revision*, vol. I, *Comprehensive Tables* (United Nations publication, Sales No. E.01.XIII.8 and Corr.1).

14. Following the same trend as the population at large, the school-age population has been growing rapidly (table 2). Although school systems vary, typically primary school students are expected to be aged 6-11 years, secondary-school students 12-17 years, and students in tertiary levels 18-23 years. In 2000, the school-age population (aged 6-23 years), at 2 billion, was 2.3 times as large as in 1950. During 1950-1975, the school-age population increased even more rapidly than did the population as a whole, and the school-age share of the total population grew from 35 per cent in 1950 to 38 per cent in 1975 before declining to reach 34 per cent in 2000. Between 2000 and 2050, the school-age population is projected to increase at a slower pace to reach 2.3 billion in 2050 (25 per cent of the total population), according to the medium-variant population projections of the United Nations. However, fertility could plausibly follow the trends assumed in either the high- or the low-variant projection. According to the former, the school-age population would reach 3.1 billion by 2050 (28 per cent of the total population); according to the latter, it would fall to 1.6 billion (21 per cent of the total population).

Table 2
Distribution of the school-age population (ages 6-23 years) by major area, 1950-2050

Major area	*1950*	*1975*	*2000*	*2025*	*2050*
			Millions		
World	887	1 538	2 043	2 248	2 335
More developed regions	252	316	284	226	222
Less developed regions	635	1 222	1 759	2 022	2 113
Africa	87	167	334	537	660
Asia	515	951	1 258	1 304	1 273
Europe	170	199	173	117	103
Latin America and the Caribbean	64	133	189	196	193
Northern America	47	81	79	83	95
Oceania	4	7	9	10	11
			Percentage		
World	100.0	100.0	100.0	100.0	100.0
More developed regions	28.4	20.5	13.9	10.0	9.5
Less developed regions	71.6	79.5	86.1	90.0	90.5
Africa	9.8	10.8	16.4	23.9	28.3
Asia	58.1	61.8	61.6	58.0	54.5
Europe	19.2	12.9	8.5	5.2	4.4
Latin America and the Caribbean	7.2	8.6	9.3	8.7	8.2
Northern America	5.3	5.3	3.9	3.7	4.1
Oceania	0.4	0.5	0.4	0.5	0.5

Source: *World Population Prospects: The 2000 Revision*, vol. I, *Comprehensive Tables* (United Nations publication, Sales No. E.01.XIII.8 and Corr.1).

15. During the period 2000-2005, all of the increase in the world's school-age population will be due to growth in the less developed regions, where the school-age population is growing at about 1 per cent per year. In the more developed regions as a group, the school-age population is decreasing, by almost 1 per cent per year. The highest rates of growth are currently seen in Africa (2.2 per cent per year) and in the least developed countries (2.5 per cent per year).

16. Owing to their differing stages in the demographic transition, the growth paths differ considerably among the major development regions, resulting in significant shifts in the geographical distribution of the school-age population. In 1950, 72 per cent of the school-age population lived in the less developed regions. By 2000, this proportion had grown to 86 per cent, and by 2050, will be 90 per cent. The majority of the world's school-age population lives in Africa and Asia, and the shares of those major areas are increasing.

17. In 1993, nine of the most populous developing countries of the world undertook the E-9 Initiative to attain the Education for All goals, both as a matter of fundamental human rights and as a strategy to curb population growth (United

Nations Educational, Scientific and Cultural Organization (UNESCO), 1993). These nine countries — Bangladesh, Brazil, China, Egypt, India, Indonesia, Mexico, Nigeria and Pakistan — have among the largest school-age populations in the world (table 3). The shares of their respective populations that are of school-age range between 30 and 43 per cent. For some of these countries, reaching EFA goals will be daunting. The school-age populations of Nigeria and Pakistan are projected to increase by two thirds between 2000 and 2050. However, in other countries, where fertility has already fallen to moderate or low levels, demography will be a lesser factor. For example, in China the school-age population is projected to decline by 23 per cent during the next 50 years and in Mexico by 10 per cent.

Table 3
Projected change in size of the school-age population, 2000 and 2050, for nine populous developing countries

	School-age population, ages 6-23 (millions)				*Percentage of population in school-aged years*	
			Change			
Country	*2000*	*2050*	*Absolute*	*Percentage*	*2000*	*2050*
China	378.9	290.4	88.5	-23	30	20
India	371.4	374.8	3.5	1	37	24
Indonesia	77.4	73.7	-3.7	-5	36	24
Brazil	60.7	58.6	-2.1	-3	36	24
Pakistan	57.6	94.9	37.3	65	41	28
Bangladesh	56.4	68.8	12.3	22	41	26
Nigeria	49.1	82.9	33.8	69	43	30
Mexico	37.4	33.8	-3.6	-10	38	23
Egypt	27.1	27.4	0.3	1	40	24

Source: *World Population Prospects: The 2000 Revision*, vol. I, *Comprehensive Tables* (United Nations publication, Sales No. E.01.XIII.8 and Corr.1).
Note: Based on medium-variant population projections from the United Nations.

18. Declines in mortality and fertility have both had major effects on the growth in the school-age population since 1950. The chances of survival from birth to school age and to adulthood have increased greatly since 1950. This increase in survival has led to a larger school-age population and therefore to greater resource demands on the education sector, particularly in the less developed regions. At the same time, lower mortality means that less of society's investment in children's education is lost to premature death. More of the children who enter school are surviving to become educated adults, parents and, eventually, elders.

19. Mortality within the school-aged years is generally lower than at other ages, although in high-mortality settings there is a significant risk of death even during this period of life. For example, based on the mortality levels of the less developed regions in 1950-1955, an estimated 8 per cent of children who had survived to early school age died before they reached young adulthood (ages 20-24) and in the least developed countries, 11 per cent did not survive that long. By 2000-2005, those risks had dropped, respectively, to 2 per cent and 5 per cent.

20. If education is regarded as an investment, then high levels of adult mortality will tend to lower the returns on that investment inasmuch as the benefits of education are primarily long-term and are realized during adult life. Based on the mortality rates prevailing in the less developed regions in 1950-1955, of those who reached early adulthood (ages 20-24), only about half could expect to survive to the late working ages (60-64 years). In the more developed regions, about three quarters survived. By 2000-2005, survival between those ages had improved, reaching 85 per cent in the more developed regions and 77 per cent in the less developed regions, but only about 60 per cent in the least developed countries.

21. Thus, even based on the mortality rates prevailing today, the risk of death during the prime working ages is substantial, especially in the least developed countries. In the least developed countries, survival is no better — and at some ages it is worse — in 2000-2005 than it was 25 years earlier. The lack of recent progress in the group of least developed countries is primarily owing to human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS), which has substantially increased adult mortality levels in the countries hardest hit by the epidemic. Declines in working-age mortality also stalled or reversed direction in some of the more developed countries, especially for men in a number of Eastern European countries (United Nations, 2001).

22. While declining mortality is expected to increase the economic returns to education, the inverse is also true, and the effects of HIV/AIDS in particular have probably led to a substantial decrease in lifetime returns to education in the countries hardest hit. For instance, Jamison and others (2001) estimate that for a man with 12 years of education in Botswana, expected lifetime earnings would be roughly two thirds higher without the increased mortality risk due to HIV/AIDS. Although improvements in mortality are projected to occur in all regions, the events of the recent past, especially in Africa, demonstrate that such progress cannot be taken for granted.

Trends in school enrolment, literacy and education

School enrolment and educational attainment

23. In the nine years following the World Conference on Education for All, between 1990 and 1999, both primary and secondary school enrolments grew at over one and a half times the pace of increase observed during the 1980s. World total enrolment at the primary level increased from 597 million in 1990 to 683 million in 1999. This growth took place exclusively in the developing world. Worldwide enrolment in secondary education grew by 103 million between 1990 and 1999, and developing countries accounted for over 90 per cent of the increase.

24. Gross and net enrolment ratios are the main measures of participation in education. Because enrolment may be quite different from actual attendance and completion, however, these statistics need to be considered in conjunction with other educational indicators. The net enrolment ratio (NER) refers to the enrolment of the official age group for a given level of education expressed as a percentage of the corresponding population. The gross enrolment ratio (GER) refers to the total enrolment in a specific level of education, regardless of age, expressed as a percentage of the official school-age population corresponding to the same level of education.

25. The latest year for which official administrative data on the GER in primary education are available is the school year 1999/2000 (table 4). Latin America and the Caribbean had the highest GER (126) and sub-Saharan Africa the lowest (81). The rate for sub-Saharan Africa was close to the average rates for the least developed countries. Two countries (Burkina Faso and the Niger) had a critically low GER of less than 50, while 45 others had a GER between 50 and 100. Many countries had a GER of over 100. The primary school GER showed an increase during the 1990s in all developing regions. However, in sub-Saharan Africa, the region with the lowest enrolment ratios, the gain was smaller than in other regions. This was, nevertheless, an improvement over the decade of the 1980s, when sub-Saharan Africa as a whole had experienced a decline in the GER for primary school.

Table 4
Gross and net enrolment ratios and gender parity index, by region, 1999/2000

	Gross enrolment ratio		*Net enrolment ratio*		*Gender parity index*[a]	
Region	*Primary*	*Secondary*	*Primary*	*Secondary*[b]	*Primary*	*Secondary*
World	100	62	83	68	0.93	0.93
Countries with economies in transition	91	74	79	[c]	0.99	1.04
Developed countries	102	107	97	[c]	0.99	1.03
Developing countries	101	56	82	[c]	0.92	0.89
Arab States and North Africa	91	60	79	67	0.88	0.92
Central and Eastern Europe	94	79	87	85	0.96	1.00
Central Asia	89	44	69	[c]	0.99	0.99
East Asia and Pacific	106	65	93	55	1.00	0.94
Latin America and the Caribbean	126	82	96	61	0.98	1.08
North America and Western Europe	102	106	96	89	0.99	1.03
South and West Asia	99	52	79	[c]	0.84	0.75
Sub-Saharan Africa	81	24	57	21	0.89	0.85

Source: UNESCO, *Education for All: Is the World On Track? EFA Global Monitoring Report, 2002* (Paris, UNESCO Publishing, 2002).

Note: Regional groupings correspond to those used by UNESCO for the EFA assessment, and differ somewhat from those used elsewhere in the present report (see UNESCO (2002)). Except as noted, values are weighted means.

[a] Enrolment ratio for girls divided by the ratio for boys. Values shown here are based on the gross enrolment ratios.

[b] Median values.

[c] Data unavailable.

26. The NER remains the preferred, though not the sole, international indicator for measuring progress towards universal primary education. There are 114 countries for which NER data were available for 1999/2000. The data show that: two countries (the Niger and Angola) had an NER below 30; 15 countries, mostly in sub-Saharan Africa, had an NER between 30 and 60; 30 countries had an NER between

60 and 90; and 67 countries (59 per cent of those reporting) had an NER above 90. The NER in Latin America and the Caribbean, at 96, was comparable with that in the developed countries. Sub-Saharan Africa, on the other hand, had the lowest NER of the regions with an estimated 57 per cent of primary-school-age children having been enrolled during the school year beginning in 1999.

27. Regarding the NER in secondary school, in 1999, nearly two fifths of all countries with data had achieved a ratio of 80 or more, but most of those countries were in the more developed regions. In the less developed regions, under 10 per cent of countries had reached that level.

28. A clearer picture of the extent of participation in schooling can be obtained by considering the gross and net enrolment ratios together, as well as the gap between them. The NER measures the degree to which countries have established a regular primary education cycle for the official primary school age group. The difference between the NER and GER measures the provision of education to under-age and over-age children. Evidence shows that the GER is significantly higher than the NER in two main regions, sub-Saharan Africa and Latin America and the Caribbean. This means that early and/or late entrance of pupils as well as high repetition of school grades may prevail in these regions. Almost all such countries have both a large proportion of over-age students and a relatively high proportion of repeaters.

29. The "survival rate" to grade 5 — the percentage of those enrolling in primary school who eventually reach grade 5 — is often used as a proxy for primary completion, since children who reach grade 5 are less likely to revert to illiteracy on leaving school. School survival rates can be calculated only for a limited number of countries with data available for both the 1998/99 and 1999/2000 school years. About half the countries retained 4 out of 5 pupils until grade 5; some lost half their enrolment or more.

30. Repetition is considered to be an important aspect of both the quality of education and, along with school survival, of the internal efficiency of the education system. Furthermore, high repetition rates often point to high dropout rates. The percentage of repeaters is fairly high in many developing countries. More than 10 per cent of pupils repeat a grade of primary education in more than half of the countries in sub-Saharan Africa.

31. In 1999/2000, an estimated 115 million children of primary school age were not in school. Of these, 50 million were boys and 65 million girls. Almost all the out-of-school children in the world (94 per cent) lived in developing countries. Sub-Saharan Africa and South and West Asia have the most significant concentrations of out-of-school children. Each of these regions accounts for just over one third of the world total.

32. An estimated 57 per cent of the total adult population (aged 15 years or over) had completed primary school in 2000; the proportion was 85 per cent in more developed countries and 43 per cent in developing countries (Barro and Lee, 2000). The estimated average number of years of education attained by the adult population increased, at the world level, from 5.2 years in 1970 to 6.7 years in 2000. Although the attainment gap between more and less developed countries had narrowed somewhat, it remained large, at 4.6 years in 2000 (an average of 9.7 years attained in the more developed countries and 5.1 years in developing countries). As of 2000, average attainment was lowest, at 3.5 years, in sub-Saharan Africa.

Illiteracy

33. Over the 30-year period between 1970 and 2000, estimated adult illiteracy rates (for ages 15 years or over) declined worldwide from 37 to 20 per cent, mostly owing to effects of increases in primary school enrolments. By 2015, adult illiteracy is projected to decrease further to 15 per cent (table 5). Even though there has been substantial progress in all regions, illiteracy remains common in much of the developing world. In 2000, about one fourth of the adults in the developing regions, and almost half in the least developed countries, were illiterate. The level was 45 per cent in South and West Asia and 40 per cent both in sub-Saharan Africa and in the Arab States and North Africa, but under 15 per cent in Eastern Asia and Oceania and in Latin America and the Caribbean.

34. Despite the worldwide gains observed in literacy rates, the number of adult illiterates remains very high and almost constant because of the impact of population growth. In 1990, some 879 million adults in the world were illiterate; by the year 2000, their number is estimated to have declined only slightly, to 862 million. Among the developing regions, the number of illiterate adults increased between 1990 and 2000 in sub-Saharan Africa, in the Arab States and North Africa and in South and West Asia, and by 2000 these regions accounted for about 70 per cent of the world's adult illiterate population. Without major changes, these regions will hold 80 per cent of the world's illiterate population by 2015.

35. In a predominantly literate society, there is intense social pressure for all to learn to read and write. Correspondingly, in a predominately illiterate society, there is likely to be less pressure for those who cannot read and write to achieve literacy. In 1990, 28 countries for which data are available had literacy rates of less than 50 per cent. In 2000, 21 countries still remained below the 50 per cent threshold (13 in sub-Saharan Africa, 4 in the Arab States and North Africa, 3 in South and West Asia, and 1 in the Caribbean). It is projected that six countries from these regions may remain below 50 per cent literacy by 2015, unless major efforts are made to universalize basic education among children and youth and to spread literacy among adults. By 2015, all of the countries in East Asia and the Pacific, and in Latin America and the Caribbean, except Haiti, are projected to have at least 70 per cent literacy.

36. With respect to the Dakar (2000) goal of halving illiteracy by 2015 (Dakar Framework for Action: Education for All: Meeting Our Collective Commitments, para. 7 (iv)), if present trends continue: about 25 developing countries stand a good chance of reaching the goal; 32 countries are poised to achieve an improvement of 40-50 per cent; another 26 countries would make an improvement of 30-40 per cent; and the remaining 30 developing countries, many among those with the lowest literacy levels, are projected to improve by less than 30 per cent.

37. The youth illiteracy rate, which refers to age group 15-24, reflects the outcome of the more recent basic education process. According to UNESCO estimates, the world's youth illiteracy rate dropped from 26 per cent in 1970 to 16 per cent in 1990 and to 13 per cent in 2000. If this trend continues, the rate is likely to decline to 9 per cent by the year 2015 (table 5). In absolute numbers, the youth illiterate population in the world has decreased from an estimated 157 million in 1990 to some 141 million in 2000, and is projected to decline to 113 million in 2015.

Table 5
Estimated and projected adult and youth illiteracy rates, and gender gap: 2000 and 2015

Region	Year	Adult illiteracy rate (ages 15+) (Percentage) Both sexes (1)	Male (2)	Female (3)	Gender Gap (3) - (2)	Youth illiteracy rate (ages 15-24) (Percentage) Both sexes (4)	Male (5)	Female (6)	Gender Gap (6) - (5)
World total	2000	20	15	26	11	13	10	17	7
	2015	15	11	19	8	10	7	12	4
More developed regions[a]	2000	1	1	2	1	0.3	0.3	0.3	0.1
	2015	1	1	1	0.2	0.2	0.2	0.2	0.0
Less developed regions	2000	26	19	34	15	16	12	20	8
	2015	19	14	24	10	11	9	13	5
Least developed countries	2000	48	38	58	20	35	27	42	15
	2015	36	28	44	15	23	19	27	8
Sub-Saharan Africa	2000	40	31	48	17	24	19	29	10
	2015	26	20	32	11	14	12	17	5
Arab States and North Africa	2000	40	28	52	24	24	17	31	15
	2015	28	20	37	17	15	11	19	7
Latin America and the Caribbean	2000	11	10	12	2	5	5	5	-1
	2015	7	7	7	1	3	3	3	-1
Eastern Asia and Oceania	2000	13	8	19	12	3	2	4	2
	2015	7	4	10	6	1	1	2	1
South and West Asia	2000	45	34	56	23	30	23	39	16
	2015	34	25	44	18	21	16	26	10

Source: UNESCO Institute of Statistics, Estimates and projections of youth and adult illiteracy: July 2002 assessment, accessed 8 January 2003 (http://portal.unesco.org).

Note: Regional groupings correspond to those used by UNESCO and differ somewhat from those used elsewhere in the present report. More developed regions and countries with economies in transition include: North America, Europe (not including Cyprus, Malta or Turkey), Central Asia (except Mongolia), Australia, Japan, New Zealand). Less developed regions include all countries not included in the more developed and transition group. Numbers may not add to totals because of rounding.

[a] Including countries with economies in transition.

38. For the developing regions as a whole, the youth illiteracy rate is estimated to have decreased from 19 to 16 per cent during the period 1990 to 2000 and is expected to fall to 11 per cent by 2015 if current trends continue. Progress has also been made in the least developed countries, where the youth illiteracy rate is estimated to have decreased from 44 to 35 per cent during the 1990s and is projected to decline to 23 per cent by 2015. Among the developing regions, the current estimates of youth illiteracy range from only 3 per cent in Eastern Asia and Oceania to 30 per cent in South and West Asia.

Gender disparities

39. The gender balance of entrants to primary education provides an early indicator of the success or failure of efforts to narrow the gender gap in education. Globally, 49 per cent of those at school-age entry (age 6) are girls. However, during the 1990s, the actual proportion of girls among new entrants was about 46 per cent. The share of girls among new entrants ranges from 44 per cent in South and West Asia to 49 per cent in Latin America and the Caribbean. In the period between 1990/91 and 1999/2000, gender disparities narrowed in some countries with the biggest gaps, indicating that measures to improve gender equality taken during the 1990s were bringing results.

40. The gender parity index (GPI) is the ratio of the enrolment ratio for girls to that for boys. Based on gross enrolment ratios, the GPI in both primary and secondary school enrolment in the more developed countries is near or slightly above one, indicating higher enrolment ratios for girls than boys. However, in most developing countries, a substantial gender gap in enrolment in favour of boys remains at both the primary and secondary levels of education (table 4).

41. From 1990 to 1999, the GPI (based on gross enrolment ratios) increased from 0.87 to 0.92 for primary school age enrolments and from 0.75 to 0.89 for secondary school enrolments in the developing countries. The proportion of girls in primary and secondary enrolment remains considerably lower than that of boys in many parts of the developing world, notably Southern Asia, the Arab States and North Africa, and sub-Saharan Africa. In these regions, the GPI for primary school was still 0.84-0.89 in 1999. On the other hand, gender gaps in primary school age enrolment are significantly lower in Latin America and the Caribbean and Eastern Asia and Oceania, where this gap is currently closing and is non-existent in some countries. Especially within Africa and Asia, there are large differences between countries in the degree of gender disparity in enrolment ratios. Even in the latter regions, there are some countries where enrolment ratios for girls exceed those for boys, although disparities to the disadvantage of girls are both more common and in general much larger.

42. The range in values of the GPI is greater for secondary school than for primary school enrolments. In the more developed countries and in Latin America and the Caribbean, secondary school enrolment for girls exceeds that for boys in a majority of cases. However, in a majority of African and Asian countries, girls have substantially lower enrolment ratios than boys at both the primary and secondary levels.

43. Disparities between girls' and boys' enrolment are usually lower when only children of regular school age are taken into account using net enrolment than when gross enrolment is examined. It appears that although more boys are enrolled

overall, they also make up more of the population of over-age pupils. In the majority of countries, boys also repeat grades more than girls.

44. For secondary education, countries that have moderate gender disparities in favour of males (GPI between 0.81 and 0.98) have a reasonable chance of reaching parity by the goal date of 2005, but in countries with high disparities in favour of boys (GPI below 0.80), the goal of achieving gender parity in primary and secondary education by 2005 seems unlikely to be reached, and even more unlikely for countries with a GPI below 0.60. As is the case for primary education, most of these countries are from Central and West Africa and are members of the group of least developed countries. It will take strong and innovative approaches, integrating the economic, social and cultural dimensions of gender inequity, to redress the situation.

45. In general, gender disparities in education are higher at the level of the adult population than for children currently attending school. However, a trend towards lower gender literacy gaps can be observed in all regions of the world. For the developing regions taken together, the gender gap in illiteracy declined 18 percentage points in 1990 to 15 in 2000 and is projected to fall to 10 in 2015 (table 5). With the exception of Latin America and the Caribbean, however, where the gap is almost closed, in all other developing regions women remain disproportionately disadvantaged in terms of literacy. The gap is over 10 percentage points in Eastern Asia and Oceania, over 15 percentage points in sub-Saharan Africa and well over 20 percentage points both in South and West Asia and in the Arab States and North Africa.

46. Large gender disparities for young adults can also be found in sub-Saharan Africa, the Arab States and North Africa and South and West Asia, with gender gaps in youth illiteracy of 10, 15 and 16 percentage points, respectively in the year 2000 (table 5). Conversely, the gender gap in youth illiteracy in that year was estimated to be only 2 percentage points in Eastern Asia and Oceania, and was slightly in favour of young women in Latin America and the Caribbean.

Educational quality

47. Several EFA goals mention the need for an education of good quality. The most appropriate framework would be one that covered the inputs, processes, and outputs of the education system. Many of the existing EFA indicators cover inputs into the educational system, at least as far as numbers of students are concerned. Other inputs that require measurement might include textbooks, school buildings and other facilities.

48. Process indicators measure the way in which the inputs are turned into outputs. The most widely used process indicator in education is the pupil-to-teacher ratio. This is normally seen as an indicator of class size. However, many countries include in their count many staff who have no or limited classroom duties, and so it is perhaps better to regard the pupil-to-teacher ratio as a broader reflection of the human resources that are put into the education system. Other indicators for which data are available include repetition rates, and school survival rates, which have been discussed above.

49. Regarding outcome indicators, international tests of student achievement are becoming more common in almost all regions of the world. They can provide robust

comparable data for a whole region, though, often, access to this data is limited, and there can be reluctance to permit such comparisons to be made. These tests are expensive and are likely to be carried out only among the larger and more affluent developing countries.

50. Results from available studies demonstrate that:

- In some settings — though not in all — multigrade classrooms (pupils from different grades in a single classroom) made a positive impact on scores, while schools organized in shifts (often resulting in fewer school hours) showed a negative impact on achievement.
- Greater access to textbooks is associated with higher achievement scores, and poor access to learning materials pushes scores down.
- Teaching experience matters.
- The most experienced teachers are found in capital cities or large urban areas, and the least experienced teachers are found in rural or remote areas.
- Extra instruction outside of class increases achievement scores.

51. Pupil characteristics also play a very important role in terms of achievement, for example:

- Pupils from comparatively affluent social backgrounds are more likely to have attained minimum mastery of reading skills.
- While the gender of the pupil has little impact on scores, urban or rural residence does have an impact, the latter being detrimental.
- Many schools deal with pupils whose mother tongues differ. Pupils with relevant language skills score better on the test.

II. Education and entry into reproductive life

52. Timing of marriage, onset of sexual relationships and first birth are influenced by both cultural norms and socio-economic factors. Where education is a prerequisite for obtaining desirable jobs and achieving social mobility, the opportunity cost of early marriage or pregnancy can be significant. Yet, even as schooling deters young women and men from early marriage, education also gives them a level of independence that may lead to early onset of sexual relations and childbearing. On the other hand, in societies where there are few incentives for prolonged schooling and limited alternatives to marriage, young women and men are more likely to marry at relatively early ages.

53. Recent survey data and other research provides an overview of the extent to which education affects marriage and cohabitation, sexual initiation and contraceptive use. Data from Demographic and Health Surveys for 28 sub-Saharan African countries, 12 Asian countries and 13 countries in Latin America and the Caribbean show that early age at first marriage, onset of sexual activity and first birth are more common among women with no education than among their educated peers. In most cases, the proportions experiencing those life events decrease regularly as the level of education attained increases. There are some exceptions: in several countries, the proportions for some indicators are higher for those with

primary education than for those with no primary education. However, the proportions of women who marry or give birth before age 20 are in all cases substantially lower for those with secondary education. For example in Africa, by age 20, on average 75 per cent of uneducated women had married, 83 per cent had initiated sex and 61 per cent had had a first birth, while among women with secondary or higher education, 30 per cent were married, 64 per cent had initiated sex and 27 per cent had had a first birth. Similarly large differences by education are found in Asia and Latin America and the Caribbean (table 6). Although women with secondary or higher education are less likely to marry or give birth early, a majority of them initiate sexual activity before age 20 in most countries.

Table 6
Percentage of women and men aged 20-24 who by age 20 had ever married or had initiated sex and percentage of women aged 20-24 who by age 20 had given birth, by educational level

		Marriage by age 20			*Ever had sex by age 20*			*Had a birth by age 20*		
		Highest educational level			*Highest educational level*			*Highest educational level*		
Major area	*Number of countries*	*None*	*Primary*	*Secondary+*	*None*	*Primary*	*Secondary+*	*None*	*Primary*	*Secondary+*
						Women				
Africa	28	75	60	30	83	79	64	61	53	27
Asia	12	69	62	37	62	65	43	50	47	22
Latin America and the Caribbean	13	69	63	31	76	71	44	58	53	23
						Men				
Africa	20	21	15	9	64	72	73			
Latin America and the Caribbean	6	27	26	15	75	79	85			

Source: *Demographic and Health Surveys* (Calverton, Maryland, Macro International, Inc.).
Note: Regional averages are unweighted. The number of observations varies: some countries had incomplete information or an insufficient number of observations for one or more education categories.

54. Education plays a greater role in delaying marriage and first births than in postponing the initiation of sexual activity. As information about the onset of sexual activity was not ascertained in most Asian countries, the results discussed here for that topic pertain mainly to Africa and Latin America and the Caribbean. In Africa, the differentials between women with no education and those with secondary or higher education are, on average, 45 percentage points with respect to marriage by age 20, 19 percentage points with respect to initiation of sexual intercourse and 34 percentage points with respect to having had a birth by age 20.

55. Among men, as among women, in the majority of countries the proportion marrying by age 20 decreases as the education level attained increases. In Africa, 21 per cent of uneducated men were married by age 20 compared with 9 per cent of educated men (those with secondary or higher levels of education). In Latin America and the Caribbean, 27 per cent of uneducated men and 15 per cent of educated men were married by age 20. There are some exceptions to the general pattern — in Ghana, for example, the proportion married by age 20 is higher (12 per cent) for

men with secondary or higher education than for those with no education (8 per cent).

56. Whereas greater educational attainment appears to deter early onset of sexual activity for women, it seems to have the opposite effect among men. In Africa, 64 per cent of uneducated men compared with 73 per cent of those with secondary education were sexually active before age 20. In Latin America and the Caribbean, 75 per cent of uneducated men compared with 85 per cent of those with secondary education had initiated sexual activity by that age.

57. Most of the women who become sexually active before age 20 do so before age 18. On average, in Africa, 68 per cent of women aged 20-24 who had no education were sexually experienced by age 18, whereas the corresponding proportion among those with secondary or higher education was 39 per cent (table 7). The same relationship holds for Latin America and the Caribbean where, on average, 58 per cent of women aged 20-24 with no education had had sexual relations before age 18 compared with 24 per cent of those with secondary or higher education.

Table 7
Percentage of women aged 20-24 who had initiated intercourse before age 18 and at ages 18-19, by educational level

	Highest educational level								
	No education			*Primary*			*Secondary+*		
	Age at first intercourse			*Age at first intercourse*			*Age at first intercourse*		
Major area	*Under 20 years*	*Under 18 years*	*18-19 years*	*Under 20 years*	*Under 18 years*	*18-19 years*	*Under 20 years*	*Under 18 years*	*18-19 years*
Africa	83	68	15	79	61	17	64	39	25
Asia	62	45	17	65	46	19	43	19	24
Latin America and the Caribbean	76	58	18	71	52	19	44	24	20

Source: *Demographic and Health Surveys* (Calverton, Maryland, Macro International, Inc.).
Note: Regional averages are unweighted. The number of observations varies: some countries had missing information or an insufficient number of observations for one or more education categories.

58. Similar patterns of sexual initiation have been observed in the developed countries. Recent reports for France, Romania, the United Kingdom of Great Britain and Northern Ireland and the United States of America show that women receiving more education initiated sexual activity later. In some countries, this was also true for young men, although education tended to exercise a stronger restraint on women's early sexual activity than on men's.

59. In the more developed countries, later age at first birth is also correlated with high educational attainment. In the United Kingdom, women aged 20-24 who had left school without any qualifications were almost 20 times more likely to have had a birth by age 20 than women who attained an advanced-level certificate or higher (Wellings, 2001). In Japan, women with a junior college education had first births 15 months later than women with a high school education, while women with a

university degree had first births two years later than women with a junior college degree (Small and Kerns, 1993).

60. The onset of sexual activity can affect the health of adolescents, as adolescents often do not seek prenatal care for various reasons such as fear of parents' reaction, lack of awareness of the pregnancy or of the availability of prenatal care, or fear of expulsion from school. In the majority of countries, the onset of sexual activity before age 20 and within marriage is more frequent among women and men with no education than among their schooled peers (table 8). Premarital sexual activity before age 20 is more common, in a majority of countries, among educated women and men than among their peers with no education. Most exceptions are in Latin America and the Caribbean where, in the majority of countries, the incidence of premarital sexual initiation is higher among women with no education than among educated women. In Africa, Asia and Latin America and the Caribbean, first births before age 20 occur more often within than before marriage among all education categories.

Table 8
Proportion of women aged 20-24 who had initiated intercourse or had a first birth before age 20, and proportion of men aged 20-24 who had initiated intercourse before age 20, by marital context and educational attainment

		No education		*Primary*		*Secondary+*	
		Marital context		*Marital context*		*Marital context*	
Major area	*Number of countries*	*Before marriage*	*Within marriage*	*Before marriage*	*Within marriage*	*Before marriage*	*Within marriage*
				A. First sex before age 20 (percentage)			
				Women			
Africa	25	28	55	41	38	46	18
Asia	6	5	64	4	69	6	43
Latin America and the Caribbean	13	35	41	29	43	23	21
				Men			
Africa	20	52	11	64	9	69	7
Latin America and the Caribbean	6	69	8	71	7	82	3
				B. First birth before age 20 (percentage)			
				Women			
Africa	26	8	56	11	43	10	20
Asia	10	0	71	0	69	0	37
Latin America and the Caribbean	12	10	51	7	46	4	20

Source: *Demographic and Health Surveys* (Calverton, Maryland, Macro International, Inc.).
Note: Regional average are unweighted. Within education categories, percentages sum to the total experiencing the event before age 20.

61. The use of contraception among sexually active young women (aged 15-19) and men (aged 20-24) increases with the level of education in both sub-Saharan Africa and in Latin America and the Caribbean (table 9). In Africa, for instance, 7 per cent of adolescent married women with no education are currently using contraception, compared with 27 per cent of adolescent married women with a secondary or higher education. For Latin America and the Caribbean, the corresponding proportions are 17 per cent and 45 per cent, respectively. At each level of education, sexually active single women are more likely to use contraception than are married women. Regarding types of contraception employed, the use of traditional methods is more common among women with no education, irrespective of marital status. Similarly, among men, the use of modern methods is higher among educated men, irrespective of marital status.

Table 9
Current use of contraception and method mix, by educational level, among sexually active women aged 15-19 and sexually active men aged 20-24

	Percentage using any method					
	Unmarried			*Currently married*		
	Highest educational level			*Highest educational level*		
	No education	*Primary*	*Secondary*	*No education*	*Primary*	*Secondary*
Women aged 15-19						
Africa	20	32	57	7	15	27
Latin America and the Caribbean	[a]	46	73	17	34	45
Men aged 20-24						
Africa	33	47	61	16	23	51
Latin America and the Caribbean	[a]	56	73	39	49	64

Source: *Demographic and Health Surveys* (Calverton, Maryland, Macro International, Inc.).
Note: Sexually active = those who reported having had sexual intercourse within 28 days before the survey.
Unmarried = women who have never married and those who are currently separated, divorced or widowed.
Married = women who are currently married or are in informal or consensual unions.
[a] Data unavailable.

62. In the developed countries, the use of contraception also varies by educational level. In the United States, the percentage of young men and women who did not use contraception at first intercourse was higher among those who had not completed high school than among those who had. A similar wide gap in the non-use of contraception at first intercourse between men and women with no education and those with an advanced level of education was observed in the United Kingdom. While in the developed countries use of modern methods of contraception predominates, the type of method used at first intercourse varies by educational level. In France, for example, the use of the pill was more common among men and women enrolled in vocational schools, and their use of the condom was lower than among students in academic schools.

63. A comparison over time of the average proportions of women aged 20-24 marrying by age 20 shows that, during the 1990s, early marriage declined across all educational categories in the majority of African countries, but increased in Latin America and the Caribbean among women in each educational stratum (table 10). The most significant increases occurred among women with no education in Bolivia and Brazil; among women with primary education in Colombia and Peru; and among women with secondary or higher education in Brazil, Ghana and Zimbabwe. In some of these countries, the increase in the proportion ever married by age 20 appears to reflect an increase in informal or consensual unions, especially in Latin America and the Caribbean.

Table 10
Trends in proportion of women aged 20-24 who by age 20 had married, had initiated sex or had had a first birth, by educational level, 1987, 1990 and 1998

			Highest educational level					
			No education		*Primary*		*Secondary+*	
Major area	*Earlier year*	*Later year*	*Earlier year*	*Later year*	*Earlier year*	*Later year*	*Earlier year*	*Later year*
			Percentage married					
Africa	1990	1998	85	82	69	63	33	31
Latin America and the Caribbean	1987	1998	65	69	56	62	27	30
			Percentage having had sex					
Africa	1990	1998	89	89	87	85	70	69
Latin America and the Caribbean	1987	1998	73	79	66	74	36	43
			Percentage having had a first birth					
Africa	1990	1998	71	67	62	57	31	27
Latin America and the Caribbean	1987	1998	61	65	48	55	19	24

Source: *Demographic and Health Surveys* (Calverton, Maryland, Macro International, Inc.).

64. A similar examination of trends in the onset of sexual activity shows that in Africa, the percentage experiencing early onset by age 20 has changed little among women at all levels of educational attainment. In Latin America and the Caribbean, it has increased across all educational strata and age groups. The pattern of change in the initiation of sexual activity varies by country. Trends in the incidence of first births before age 20 are similar to those for marriage. Whereas the prevalence of first births has, on average, declined across all educational categories in sub-Saharan Africa, it has increased across all educational strata in Latin America and the Caribbean.

III. The interrelationships between education and fertility

65. Education plays an important role in improving overall economic and social status, which greatly influences the number and spacing of children desired and eventually attained. This role has been recognized and emphasized at the United Nations conferences on population, notably at the International Conference on Population and Development held in Cairo in 1994.

66. Recent survey data show that education continues to exert a significant influence on fertility levels, preferences and regulation. At the aggregate level, countries with higher literacy rates and overall educational attainment have lower total fertility rates (TFRs) than countries whose populations have lower education levels. The effect of a country's overall level of education on its TFR exists in both developing and developed countries. Moreover, this effect continues to be significant when other characteristics are controlled for.

67. Within developing countries, fertility — both current and completed — decreases as educational attainment increases. With a very few exceptions, current fertility levels (TFRs) decrease from one educational level to the next. Available data from 69 countries are summarized in table 11. Latin America and the Caribbean, sub-Saharan Africa and Western Asia display the largest differentials: in these regions, women with a secondary or higher education ultimately have about 3 children fewer than women with no education. In Northern Africa, South-central Asia and South-eastern Asia, the difference in completed fertility between the most educated group and the group with no education is lower, usually between 1 and 2 children. Of course, these regional fertility differentials by education mask wide disparities among countries. The countries with the narrowest fertility gaps between the two extreme educational groups are generally countries whose fertility levels are already quite low.

68. Differentials in fertility by educational level also appear in developed countries. However, the fertility differentials by education exhibit two major differences from those found in the developing countries. First, the gap in completed fertility between women in the lowest educational group and those in the highest educational group is smaller in developed countries than in developing countries — usually less than 1 child — an outcome related to the overall low level of fertility in the developed countries. Second, fertility differentials by education have become less pronounced in many countries, such as Canada, Belgium, Hungary, Italy, Latvia, Norway, Portugal, Slovenia, Spain and Sweden, where women in the highest educational group (with a post-secondary degree) have a number of children that is equal to or even greater than the number of children of women in the intermediate educational group (with a secondary school diploma).

69. In Eastern Europe and the other countries of the former Eastern bloc, the difference in completed fertility between women in the highest educational category and women in the lowest educational category is about 1 child or less. In the other developed countries, education affects current fertility mainly through its influence on the timing of first births: more educated women have a lower number of children at the time they are interviewed because they have had their first birth at a later age. For example, in Italy in the 1990s, the mean age at first birth among women aged 35 years or over was 22.5 in the lowest educational group compared to 28.2 in the highest educational group. In Spain, the corresponding ages were 24.4 and 25.8,

respectively. In the Scandinavian countries, the mean age at first birth varied from a range of 21.0 to 21.7 in the lowest educational group to a range of 25.4 to 25.7 in the highest educational group.

Table 11
Total fertility rates, by women's level of education, for less developed regions of the world

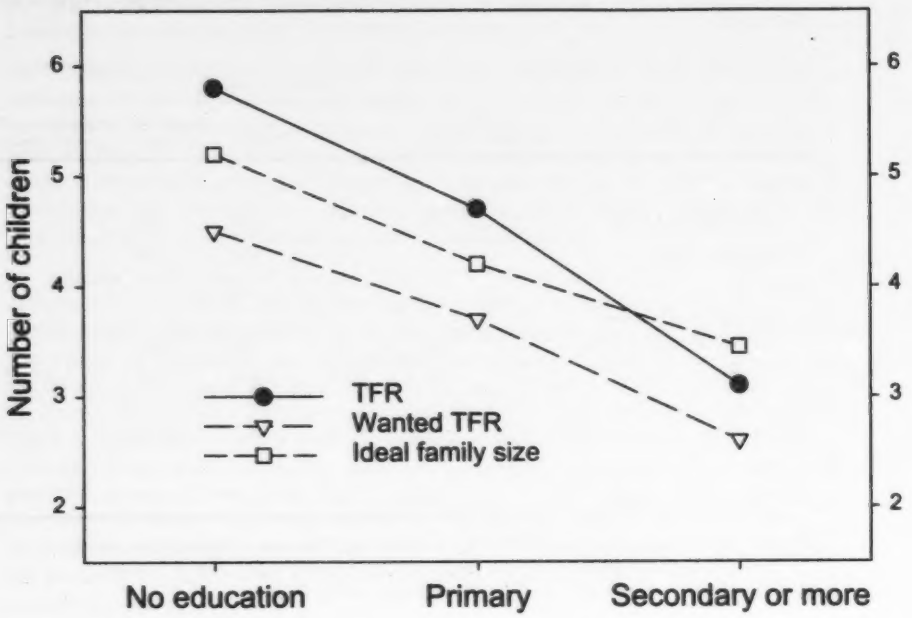
Region	*Number of countries/surveys*	*Level of education*			*Difference in TFR (none-secondary)*
		None	*Primary*	*Secondary or higher*	
Africa					
Sub-Saharan Africa	30	6.4	5.5	3.7	2.7
Northern Africa	3	4.7	3.6	2.8	1.9
Asia					
Eastern, South-central and South-eastern Asia	13	3.9	3.5	2.7	1.2
Western Asia	10	6.0	4.6	3.5	2.6
Latin America and the Caribbean	12	5.8	4.5	2.6	3.2
Oceania					
Papua New Guinea	1	5.0	5.0	3.9	1.1

Sources: United States Centers for Disease Control and Prevention Reproductive Health Surveys; Demographic and Health Surveys (DHS); Gulf Family Health Surveys.
Note: Regional averages are based on unweighted country figures.

70. Education also exerts a significant influence on childlessness in the developed countries, except in countries with economies in transition. Thus, in Northern America, Southern Europe, Western Europe and, to a lesser extent, Northern Europe, more educated women have a greater probability of remaining childless compared with women with a lower level of education. For example, in the United States in the 1990s, the proportion of women childless at age 30 varied from 17 per cent among those who had less than a high school diploma to 56 per cent among those who had a post-secondary degree.

71. Women with higher levels of education desire smaller families. Educational differentials in the mean ideal number of children are greatest in sub-Saharan Africa, where women with no education desire to have 2 children more than women with a secondary or higher education, on average. Wanted fertility rates are substantially lower than actual fertility rates, and this gap also varies across educational subgroups (figure III). It is much larger among women with no education or primary education than among women with a secondary or higher education. This is particularly true in Latin America and the Caribbean where the difference between wanted fertility rates and actual fertility rates among women with no education is almost twice as large as the difference among highly educated women.

Figure III
Average total fertility rates (TFR), wanted TFR,[a] and ideal family size, by women's education, for developing countries



Note: Based on Demographic and Health Survey data for 56 developing countries with information available for all three indicators.

[a] Calculated in the same manner as the conventional TFR, except that births that are declared to be unwanted are excluded from the numerator.

72. In the developing countries, the percentage using contraception varies considerably across educational strata, with better-educated women consistently having a higher contraceptive prevalence than less educated women and women with no formal education. The difference in contraceptive prevalence between those with no schooling and those with secondary education averages 29 percentage points in sub-Saharan Africa, 23 percentage points in Latin America and the Caribbean, and 19 percentage points in Asia. Even a small amount of schooling has a significant impact on contraceptive behaviour. Contraceptive-use differentials by education are most marked in sub-Saharan Africa, the region with the lowest level of education and the lowest level of contraceptive prevalence among women in the world. In this region, the percentage using contraception among married women with a secondary or higher education is more than three times as high as that among married women with no education. In the developed countries, where contraceptive prevalence is already high, differentials in contraceptive use by educational level are very small.

73. In conclusion, evidence confirms that education has a major impact on the level of fertility, especially in developing countries. In developed countries, education exerts a strong impact not so much on the level of fertility as on the timing of first births and the degree of childlessness. Female education was also found to be associated with fertility preferences, adolescent fertility and contraceptive use, with better-educated women desiring smaller family sizes, having lower percentages of pregnant women or mothers among their adolescent population, and having a higher percentage of women using contraception among their married population. Although the net effect of female education decreases significantly when other factors related to fertility such as household and community socio-economic characteristics (for example, income, urbanization, aggregate levels of schooling) are controlled for, it remains a significant factor in determining fertility, and its effect on marital fertility is usually higher than the effect of husband's education or of household income.

IV. Education, health and mortality

74. Both developed and developing countries have achieved major gains in health and survival since the beginning of the twentieth century. However, benefits have not accrued evenly across socio-economic groups. Better-educated people everywhere stay healthier and live longer lives.

75. The strength of education as a policy lever in social and economic development has been recognized at the national and international levels. The implications for health and mortality of the persistence and further widening of education differentials are dire, given the powerful association among education, health and mortality.

Developed countries

76. Education is a strong predictor of the health and mortality experience of individuals and their households in developed countries. Education differentials in health and mortality exist in all societies, irrespective of development policies, health-care systems or mortality levels. Education differentials in health and mortality are also not limited to particular ages, although the evidence discussed here relates to adults.

77. Education differentials in mortality in Europe are well documented. Kalediene and Petrauskiene (2000) found inequalities in life expectancy in Lithuania to be highly correlated with education. In the Czech Republic, not only are education differentials in mortality large, but they have also widened over time (Blazek and Dzurova, 1997; Bobak and others, 1997).

78. In Russia, between 1979 and 1989, less educated groups persistently experienced higher mortality than better-educated persons. Differentials in mortality were larger for younger than for older adults. For each age group and sex, the relative advantage of better-educated persons in Russia increased between 1979 and 1989. Education differentials were also larger for men than for women. Shkolnikov and others (1998) estimate that the education differentials in life expectancy in Russia amounted to about a 9 per cent reduction in male mortality and a 7 per cent

reduction in female mortality for each additional year of education. Infectious and parasitic diseases, respiratory diseases, accidents, violence, suicide, and factors directly related to alcohol appear to have been the causes of death associated with the widest education differentials in Russia (Shkolnikov and others, 1998).

79. In other parts of Europe, education differentials in mortality also exist. In Denmark, Norway and Sweden, differentials are relatively small; they are larger for England and Wales, Finland, France and Italy (Kunst and Mackenbach, 1994). Data for Finland for the period 1971-1995 indicate a six-year survival advantage of men with tertiary education over men with only primary education (Valkonen, 2000). Evidence for France for the period 1976-1980 suggests that men who were poorly educated experienced a 50 per cent higher mortality than more educated men (Desplanques, 1976; 1984).

80. The patterns of education differentials in mortality in Northern America are similar to those found in Europe. In the United States, there is evidence of large, persistent and widening education differentials in mortality (Elo and Preston, 1996; Pappas and others, 1993; Feldman and others, 1989). Poor and less educated persons aged 25-64 years had higher death rates than wealthier or better-educated persons, and these differentials increased between 1960 and 1986 (Pappas and others, 1993). Feldman and others (1989) found widening education differentials in male (but not female) mortality in the United States between 1960 and 1984. Elo and Preston (1996), confirmed similar relationships for the United States between 1979 and 1985.

81. An apparent difference between the United States and Europe is that in the United States, years of schooling affect equally the mortality of men and women, while in European countries, mortality for males appears to be more responsive than that for females to additional education. There are large sex differentials in life years gained from an additional year of education for Denmark, Hungary and Sweden. In all cases, except England and Wales, males gain more longevity from an additional year of education than females. At each level of education, however, the death rates for males remain well above the death rates for females.

82. Investigations of education differentials in mortality have been less extensive in Canada. However, recent research analysing income differentials — which are likely to strongly reflect education differentials — suggests that education differentials in adult mortality in Canada may have narrowed in recent years (Wilkins, Berthelot and Ng, 2001). A study of socio-economic differentials in mortality in New Zealand confirms the association between education and life expectancy in Oceania (Blakely, 2001).

83. Cardiovascular disease is one factor closely associated with the persistence and widening of education differentials in mortality in developed countries. Martikainen and others (2001), analysing social class differentials in mortality in Finland between the 1970s and the 1990s, showed that there was a slower rate of decline in mortality from cardiovascular diseases among those working in manual occupations. Education was also found to be a stronger determinant of cardiovascular disease than income or occupation and the relationship is particularly strong among women (Winkleby and others, 1992). This suggests that prevention through better education is still an important intervention.

Developing countries

84. In developing countries, education, especially that of mothers, has been found to significantly differentiate levels of child mortality. In practically all countries, children of uneducated mothers have higher relative risks of dying in early childhood than the children of mothers with primary education. Similarly, the children of mothers with primary education show higher mortality than the children of mothers with secondary or higher education. Secondary-primary differentials are generally larger than the differentials between those with no education and those with primary education.

85. Differentials in health-related knowledge and behaviour underlie education differentials in child mortality in developing countries. For example, in most countries with available data, educated women are more likely to know about the use of oral rehydration solution for treatment of diarrhoea than uneducated mothers. Educated mothers are also much more likely than uneducated mothers to have their children immunized. In countries such as Chad, Ethiopia, Madagascar, the Niger and Nigeria, differentials in measles immunization across education groups are large, with barely 1 in 4 children born to uneducated mothers being immunized against measles. The children of less educated mothers are also more likely to be at a nutritional disadvantage, relative to the children of better-educated mothers.

86. Access to, and use of, qualified medical care at delivery are also strongly related to the level of education of the mother. Educated mothers are much more likely than uneducated ones to receive good-quality care during pregnancy and delivery, thus lowering their chances of succumbing to complications during pregnancy. The fate of mothers at delivery is particularly grave when they have no one assisting them during delivery. This predicament is most common among uneducated women. In close to one quarter or more of the births among uneducated women in Burundi (1987), Nigeria (1990), Rwanda (1992) and Uganda (1988 and 2001-2002), women went through the delivery process alone.

87. In addition to their greater likelihood of knowing about health interventions and using health services, educated women marry and enter motherhood later and have fewer children, thereby reducing their chances of maternal mortality. In contrast, the higher fertility among women of lower education status and their poor delivery care increase their risk of maternal and child ill health and mortality. Maternal death can also have deleterious consequences for the orphaned children (Hobcraft, 1996).

HIV/AIDS

88. Education — that is to say, creating awareness — is an important and essential preventative measure to slow the spread of the HIV/AIDS epidemic in all countries. In developing countries, where HIV/AIDS has taken a heavy toll in mortality and morbidity, the use of condoms as a method of prevention has been promoted actively. Yet the data show that this information has not been well assimilated and that substantial differentials exist across education groups.

89. For example, almost all surveys indicate that uneducated women are less likely to know that condom use prevents HIV transmission. However, even among the educated, in some countries large majorities of women do not know that condoms

help protect against HIV/AIDS. Perhaps information, education and communication (IEC) messages have failed to reach their targets. Alternatively, those who receive the message may not be acting on it. This is consistent with the observation that women may view condoms mainly as contraceptives and not as a method of prophylaxis against AIDS (United Nations, 2002, p. 24).

90. An important aspect of the relationship between HIV/AIDS and education is the threat that the epidemic poses to the survival of education systems in high-prevalence developing countries. The education systems of high-HIV prevalence countries are being challenged by high levels of teacher attrition and absenteeism because of HIV/AIDS-related illness and death among teachers. The epidemic inflicts heavy burdens on students and their families, often resulting in declining school enrolments and increasing dropout rates. As education systems are weakened by the HIV/AIDS epidemic, teaching and learning are becoming less effective for many segments of population. Health and mortality differentials are likely to become more pronounced because better-educated persons will protect themselves more effectively in adverse health environments.

91. In conclusion, among the socio-economic variables that are associated with differentials in health and mortality, education has shown effects that are among the strongest and the most consistent. The reasons for the widespread education differentials in health and mortality in both developing and developed countries are not completely understood. In developing countries, empowerment of individuals to take better control over the inherent health risks of their environment appears to play an important role. In developed countries, lifestyle factors such as smoking and excessive alcohol consumption have been implicated. It is puzzling that, with respect to HIV/AIDS, behaviour change among both the educated and uneducated groups in many countries has not, at present, been found to be very strong.

92. Whatever the causes, the existence of large education disparities in health and mortality suggests that internationally agreed targets for the reduction of mortality and the achievement of Health for All goals are not likely to occur without major improvements in access to education, especially in developing countries. Since education is associated with lower mortality and better health in virtually all contexts, regardless of educational philosophy and orientation, expanded access to education is likely to lead to gains in health and survival. In brief, for both children and adults, better education is associated with significant improvements in health, reduction of mortality, and longer life.

V. Education and international migration

Educational attainment of migrants

93. The socio-economic characteristics of migrants have been the object of numerous empirical studies, particularly in the main traditional countries of immigration, such as Australia, Canada and the United States (Borjas, 1994 and 1999; Beggs and Chapman, 1991; Chiswick, 1986). Education has been characterized as one of the fundamental measures of international migrants' contribution to the receiving country and loss to the sending country.

94. Figure IV shows the educational attainment of migrants and non-migrants in three traditional countries of immigration (Australia, Canada and the United States) and in selected European countries, based on information from censuses and other household-based inquiries conducted since the mid-1990s. The educational attainment of migrants and non-migrants differs significantly by country. In the United States, and in the countries of Western Europe, international migrants are less educated than the native population. However, in the new immigration countries of Southern Europe, international migrants tend to be more educated than their native counterparts. In some countries, migrants include larger proportions than native-born at both the highest and lowest ranges of the educational spectrum. In addition, the traditional countries of immigration — Australia, Canada and the United States — attract more educated migrants than the receiving countries of Europe. Women in both the migrant and non-migrant populations have lower levels of education than men, but the differential is usually larger among migrants.

International migration for education

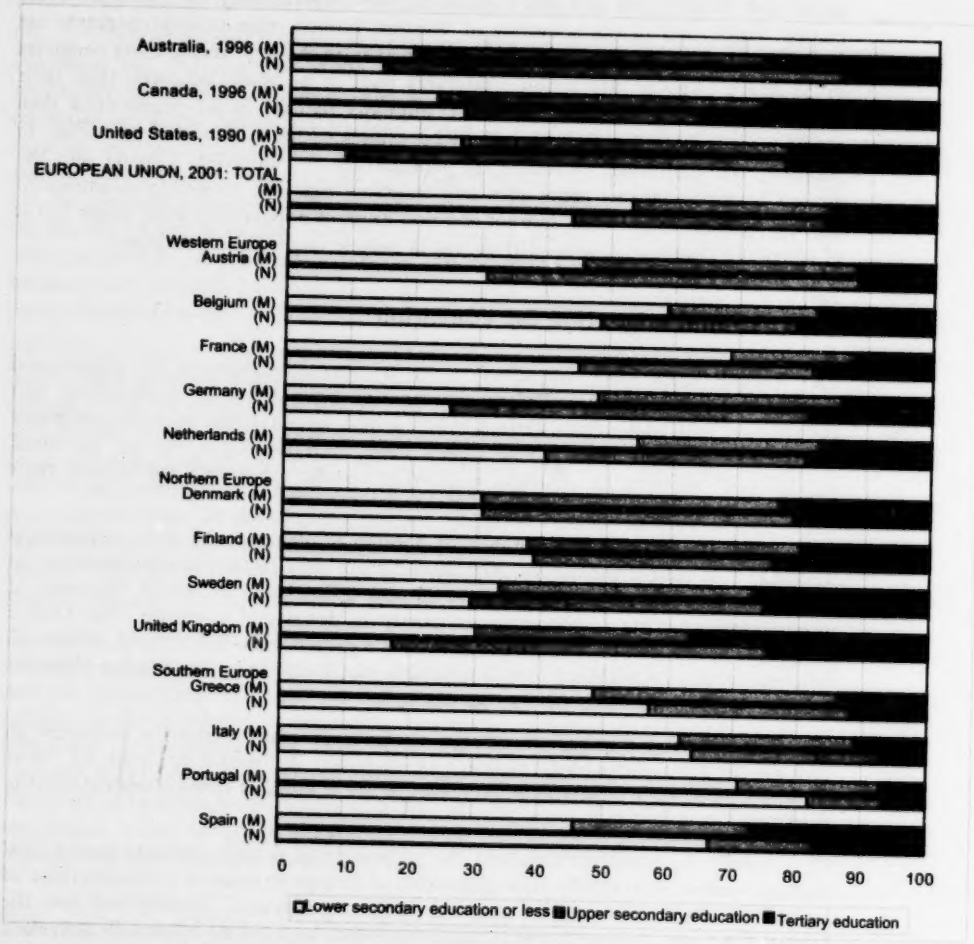
95. Recent years have witnessed a rapid internationalization of educational systems in many countries. Many universities have built up partnerships and cooperation with institutions abroad, while others have created overseas campuses and centres of their own. These trends have been paralleled by the increased international mobility of students: a growing number of people are leaving their homeland to study abroad.

96. Table 12 displays the number of foreign students enrolled in educational institutions in recipient countries that hosted more than 10,000 foreign students. At the end of the 1990s, there were at least 23 such countries in the world. The stock of international students is concentrated mostly in developed countries. The United States stands out as the leading destination for people who seek education abroad, followed by the United Kingdom. It should be noted that some developing countries are also poles of attraction for foreign students.

97. The growing number of foreign students in many countries indicates an increase in the international mobility of students. As shown in table 12, most countries listed have experienced increases in the number of foreign students during the 1990s.

98. Among the countries surveyed, the proportion of foreign students among total students varies. A relatively high proportion of foreign students is a characteristic of higher education in Australia, Austria, Belgium, Lebanon, Switzerland and the United Kingdom. Among foreign students enrolled, men are usually more numerous than women. However, the difference is generally small. In fact, the growing presence of women among foreign students is a trend that many student-receiving countries have witnessed in the recent past.

Figure IV
International migrant and non-migrant populations age 15 years or over, by level of education, in selected countries
(Percentage)



Sources: Australia: unpublished tabulations from the 1996 Census of Population and Housing, by the Australian Bureau of Statistics; Canada: unpublished tabulations from the 1996 Census of Population (20 per cent sample), by Statistics Canada; United States: United States Department of Commerce, *1990 Census of Population. The Foreign-Born Population in the United States*, 1990, CP-3-1 (Washington, D.C., United States Bureau of the Census); European countries: Statistical Office of the European Communities (Eurostat), Labour Force Survey, 2001, unpublished tabulations provided by Eurostat.

Note: (M) Migrants; (N) Non-migrants. In Australia, Canada and the United States, data refer to foreign-born persons and natives. In Europe, data refer to foreigners and nationals.

[a] Lower secondary education refers to below grade 9; upper secondary refers to grades 9 to 13 and non-university diplomas (trade certificates and other); tertiary refers to university degrees.

[b] Population age 25 years or over only. Lower secondary education refers to below grade 9; upper secondary refers to grades 9-13, high school diplomas and some college; tertiary refers to university degrees.

Table 12

Number of foreign students in higher education, annual percentage change, proportion of foreign students among total number of students, and proportion of women among foreign students, by country of enrolment, 1990 and 1998

Host country[a]	*Number of foreign students (per 1,000)*		*Annual percentage change in foreign students*	*Percentage of foreign among total number of students in 1998*	*Percentage of women among foreign students in 1998*
	1990	*1998*			
Australia	14[b]	73[b,c]	18	13	49
Austria	18	30	6	12	48
Belgium	27	36	4	10[d]	..
Canada	35	36	0	4	43
Denmark	7	12	8	6	59
France	136	133	0	7	..
Germany	107	178	7	8	45
Italy	21	23	1	1	50
Japan	49	77[e]	5	1[f]	46[f]
Jordan	3	11[g]	28	..	..
Lebanon	..	18[h]	..	22[h]	..
Netherlands	9	14	6	..	..
Norway	7	11[h]	10	3[h]	52[h]
Romania	..	13[i]	..	..	..
Russian Federation	136[j]	88[j]	..	2[d]	..
South Africa	..	15	..	2[k]	..
Spain	10	33	16	2	50
Sweden	10	24	11	5	56
Switzerland	23	25	1	16	45
Turkey	8	18	11	1	27
Ukraine	..	18	..	1[d]	..
United Kingdom	80	233	14	11	46
United States	407	548[c]	3	4[c]	43[c]

Sources: Various national Government and international publications.

Note: Two dots (..) indicate that data are not available.

[a] Countries hosting more than 10,000 students in 1998.

[b] Onshore students.

[c] Data refer to 2000/01.

[d] Data refer to 1994/95.

[e] Data refer to *Ryugaku-sei* (college students) and exclude *Shugaku-sei* (pre-college students). Data refer to 2000.

[f] Data refer to 1998.

[g] Data refer to 1996.

[h] Data refer to 1995.

[i] Universities only.

[j] Data refer to 1992.

[k] Data refer to 1994.

99. Foreign students often come from countries that have geographical, historical, linguistic or institutional linkages with the host countries. Major student-recipient countries in Africa and Asia mostly attract students within the region, playing the role of regional hub for higher education. It is likely that the regional integration of Europe has furthered the international mobility of students within the European Union. Institutional ties remain close among countries with economies in transition. Thus, in the Russian Federation, the highest proportion of foreign students originates in the successor States of the former Union of Soviet Socialist Republics (USSR). A preponderance of Asian students characterizes student migration to the traditional countries of immigration.

100. Just a few decades ago, migration for the purpose of education was seen as an opportunity mostly for selected elites who were expected to study for public, rather than individual, gain. Many entered foreign countries with education aid, and, upon their return were expected to become leaders who would maintain close political and trade links with the country where they studied (Borjas, 2002; Shu and Hawthorne, 1996). More recently, however, student migration, with its growing complexity, has developed a momentum of its own. Increasingly, student migration has paved the way for permanent settlement or for a migrant workforce.

101. Foreign students educated locally may be at an advantage in finding employment, in terms of their physical presence, degree recognition, and language mastery, as well as familiarity with the local institutions. Furthermore, as recruitment of highly skilled professionals has become competitive with the advent of a knowledge-based economy, foreign students in science and technology have come to be seen by host countries as part of a qualified workforce. Consequently, an increasing number of countries have taken measures allowing foreign students in specified fields or those with key skills to convert their residence status, facilitating access to long-term or permanent migration status.

International migration policies and education

102. By seeking to encourage certain types of mobility while restricting others, immigration policies influence migrants' skills. Education is one of the factors taken into consideration by countries that apply selective admission and residence criteria. In the past, only some traditional countries of immigration applied such selective criteria. Such criteria differ significantly from country to country. Some countries do not have policies with regard to education achievements per se, but do have policies favouring immigrants with specific skills, which generally require advanced training. The traditional countries of immigration admit immigrants for permanent residence. Some of these countries — Australia and Canada, for example — have established their permanent settlement policies based on a point system that increasingly favours highly skilled migrants.

103. In Australia and Canada, applicants for permanent residence must satisfy a point test with scores based on education, work experience, language proficiency and other skills. In contrast, migrant recipient countries in Europe did not have selective admission criteria in the past for either migrant workers or their family members. Thus, differences in migrants' education among European countries stem more from specific labour demands and from the national origin mix of migrants in each country than from diverse national immigration policies.

104. Since the second half of the 1990s, many countries have enacted legislation that places greater emphasis on migrants' skills. As a result, the share of immigrants admitted under a skilled-based category has increased in these countries. Even though the relationship between education and skills is not always clear-cut, the implementation of increasingly selective admission policies will most probably influence the educational attainment of international migrants in most receiving countries.

105. In sum, the education level of international migrants varies widely depending on their region or country of origin. The distance between country of origin and country of destination, the reasons for migration and the characteristics of the countries of destination or origin are among the reasons.

106. As already indicated, a growing number of students are pursuing higher education outside their own country. Cultural, geographical and historical as well as institutional ties between sending and recipient countries govern the direction of student mobility. International migration for the purpose of education is likely to be furthered as the value attached to knowledge and skills acquired through overseas education increases and as ensuring sufficient trained human resources becomes a major concern of policy makers.

VI. Conclusions

107. Education is a vital aspect of population change, social development and economic growth for every society, impacting the economic future and social well-being of all individuals. Education is also a globally recognized human right. As stated in the Universal Declaration of Human Rights adopted by the United Nations General Assembly more than five decades ago: "Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education shall be equally accessible to all on the basis of merit" (article 26, para. 1).

108. The right to education, and education's importance for societal and individual development, have been repeatedly acknowledged in major United Nations conferences and summits. The centrality of education is clearly reflected in the outcomes of the global United Nations conferences during the 1990s and the Millennium Summit. The World Conference on Education for All in 1990 established goals and strategies to achieve basic education for all. Starting from that Conference, the World Education Forum (Dakar summit) in 2000, the Millennium Summit in 2000, and up through the recent special session of the General Assembly on children in 2002, the international community of nations has explicitly recognized that education, especially primary schooling, is critical for achieving social and demographic progress, sustained economic development and gender equality. Education is one of the key objectives of the United Nations Millennium Declaration, adopted by the Assembly in September 2000. In paragraph 19 of the Millennium Declaration, heads of State and Government resolved to ensure that, by 2015, "children everywhere, boys and girls alike, will be able to complete a full course of primary schooling and that girls and boys will have equal access to all levels of education".

109. In the area of population, building upon the recommendations of the previous United Nations conferences on population, the Programme of Action of the International Conference on Population and Development (1994) called upon Governments to ensure universal access to primary education before 2015 (para. 11.6) and ensure access by girls and women to education beyond the primary level (para. 4.18). In paragraph 11.2 of the Programme of Action, education is defined as a "key factor in sustainable development (which is) at the same time a component of well-being and a factor in the development of well-being through its links with demographic as well as economic and social factors".

110. Education provides enormous impetus to the development of the poorer countries of the world, by providing opportunities for individuals, especially women, to achieve their potential and contribute meaningfully to their communities. Education not only imparts technical information — reading, writing, mathematics, sciences — but provides opportunities for self-discovery and personal enrichment. This knowledge and increased understanding of their place in the world and their community empower individuals to more effectively realize their desires and achieve their potentials. Through education, individuals are better able to enjoy healthy lifestyles, achieve the desired number and spacing of children, undertake the type of work that they wish to undertake and, in sum, better manage their lives. When aggregated, these individual choices, decisions and improvements have powerful effects on national development. No society can consider itself truly developed without its citizens' being educated.

111. Education impacts society along many paths. This report focuses on one critical avenue — the interrelationships between education and population, and their resulting effects on development. The major conclusions of the report are summarized below within the following areas: (a) interrelationships among population, education and development; (b) expected changes in the school-age population and the achievement of internationally recognized goals; (c) impact of education on patterns of marriage, onset of sexual activity, fertility and contraceptive use; (d) relationship among education, health and mortality; and (e) role of education in international migration.

112. **Relationships of education and development:**

- **Increased education makes an important contribution to societies' economic growth and to the economic fortunes of individuals. Evidence also suggests that for low-income countries, expansion of primary education represents the best investment. For middle-income countries, where primary education is typically already widespread, increased investment in secondary education tends to have a greater impact on economic growth.**

- **Illiteracy is a powerful predictor of poverty. A large body of research shows that primary education has a catalytic role in improving economic and social conditions among the poorest segments of society, including girls, rural dwellers and minorities. An important conclusion is that the expansion of educational opportunities is one of the most powerful tools for improving such conditions. Another important conclusion is that the expansion of educational opportunities is one of the most powerful tools that Governments have for promoting both income growth and equality.**

- **In some settings, the direct economic returns to women's education are limited because women are excluded from many types of employment. Nevertheless, studies of economic returns to education for individuals demonstrate that the returns from increasing women's schooling are, on average, even larger than the returns from increasing men's schooling.**

113. **Growth of the school-age population and meeting the goals: school enrolment and literacy:**

- **The enormous growth in the numbers of school-age children has presented a formidable challenge to countries in the less developed regions. Worldwide, the school-age population comprises about 2 billion persons, more than double that of 1950. Close to 90 per cent of the school-age population lives in the less developed regions. In Africa alone, the school-age population comprises 330 million persons, which is nearly quadruple the number in 1950.**

- **Between 2000 and 2050, nearly 300 million persons are expected to be added to the world's school-age population. Over 350 million — a 20 per cent increase — are expected to be added in the less developed regions. Over 90 per cent of this increase is projected to occur in Africa, whose school-age population is projected to double from 330 million in 2000 to 660 million in 2050. The school-age population of Nigeria alone will increase by 34 million (nearly 70 per cent).**

- **The school-age population of the more developed regions is expected to decline by over one fifth between 2000 and 2050 — by about 60 million. The school-age population of Europe is projected to decline by 70 million (40 per cent). In contrast, the school-age populations of both Northern America and Australia-New Zealand are expected to rise by 20 per cent — by 16 million in the case of North America and by 2 million in the case of Australia-New Zealand.**

- **An estimated 862 million adults in the world were illiterate in 2000. Four countries — Bangladesh, China, India and Pakistan — account for close to two thirds of the world's illiterate population.**

- **The Dakar goal, adopted in 2000, requires a 50 per cent improvement in national literacy rates by 2015. If present trends continue, about 25 developing countries are likely to reach this goal. Another 58 countries are poised to achieve an improvement of 30-50 per cent in their illiteracy rate. The remaining 30 countries, many among those with the lowest literacy levels in the world, are projected to reduce illiteracy by less than 30 per cent.**

- **Two thirds of the world's illiterate adults are women. Gender gaps remain large in many countries, especially in Africa and Asia. For example, in sub-Saharan Africa in 2000, 29 per cent of young women (aged 15-24) were illiterate, as compared with 19 per cent of young men, and in South and West Asia, the figures were 39 per cent for young women and 23 per cent for young men.**

- **Literacy rates among women have been improving at a faster pace than among men. However, in 2015, at current trends, there will still be 507 million illiterate women compared with 292 million illiterate men.**

- **Progress in improving access to schooling had been in general greater during the 1990s than during the 1980s. Yet, as of 1999/2000, an estimated 115 million children of primary-school age were not in school. Nearly all (94 per cent) of those children live in the developing regions.**

- **In most parts of the world, girls and women have traditionally received less education than boys and men. Over recent decades, there has been substantial progress in narrowing the gap between boys' and girls' enrolments and the gender gap in literacy, in all regions. Yet the gaps remain large in many countries, especially in Africa and Asia. By contrast, in the more developed regions and in Latin America and the Caribbean, there exist today only small gender gaps in primary and secondary enrolments, and such differences as do exist are usually to the advantage of girls.**

- **At current rates of progress, 57 countries are unlikely to reach the goal of universal primary education by 2015. Furthermore, 41 of these countries, including some of those in Central and Eastern Europe, have experienced some backsliding in recent years.**

114. **Marriage, onset of sexual relations, fertility and family planning:**

- **Among both women and men, an early age at first marriage is more common among those with no education than among their educated peers.**

- **Women's age at onset of sexual activity is higher among those with higher levels of education. The evidence for men, however, is less clear.**

- **Education of women is a major factor influencing the start of childbearing. In the developing countries, the proportion of adolescents that have started childbearing is 3 to 5 times as high among adolescents with no education as among those with a secondary or higher education.**

- **The impact of education on fertility is significant, both at the aggregate level and at the individual level. Globally, countries with higher female literacy rates and educational attainment have lower total fertility rates than countries whose populations have lower education levels.**

- **The impact of family size on children's education in most settings is generally found to be weak in comparison with other social factors — household poverty, for instance. However, in some countries, unwanted and excess fertility has been found to reduce children's educational attainment, and for adolescent girls, pregnancy often leads to dropping out of school.**

- **Within countries, fertility decreases as educational attainment increases. The largest fertility differentials by education are found in sub-Saharan Africa, Western Asia, and Latin America and the Caribbean, where women with a secondary or higher education ultimately have, on average, about 3 children fewer than women with no education. Differentials in**

fertility by educational level are much smaller in developed countries than in developing countries.

- **In the developing countries, husband's higher education is also related to lower completed fertility, but its effect is weaker than that of wife's education. In the developed countries, there is only a slight difference (less than one half child) between the family size of the least educated men and that of the most educated men.**

- **The relationship between educational attainment and fertility evolves depending on the stage a society has reached in the fertility transition. The difference in total fertility between the lowest and the highest educated tends to widen at the beginning of the fertility transition. The difference narrows as the fertility transition proceeds further, and as low-fertility norms become diffused throughout the society and family planning services become accessible to all.**

- **Women with higher levels of education desire smaller families. Education differentials in the ideal number of children are greatest in sub-Saharan Africa, where women with no education desire to have, on average, 2 children more than women with a secondary or higher education.**

- **In general, women in developing countries want fewer children than they actually have and this gap varies across educational groups. The gap between desired and actual fertility is larger among women with no education or primary education than among women with a secondary or higher education. This is particularly true in Latin America and the Caribbean where the difference between wanted fertility rates and actual fertility rates among women with no education is almost twice as large as the difference among highly educated women.**

- **In the developing countries, contraceptive prevalence varies considerably across educational strata, there consistently being a higher prevalence among better-educated women than among women with low or no formal education. Even a small amount of schooling has a significant impact on contraceptive behaviour. Contraceptive-use differentials by education are most marked in sub-Saharan Africa, the region with the lowest level of education and the lowest level of contraceptive prevalence. In Africa, the proportion using contraception among women with a secondary or higher education is more than 3 times as high as that among women with no education. In the developed countries, where contraceptive prevalence is already high, differentials in contraceptive use are small.**

115. **Health and mortality:**

- **Declining mortality has acted to accelerate the growth of the school-age population. Even though this has the short-term effect of requiring the provision of enough teachers and schools, mortality decline also means that less of the costly investment in educating children is lost to premature death. In economic terms, declining mortality increases the returns to the investment in education, since more of the children who receive schooling survive to become productive workers, parents and, eventually, elders.**

- **Of the socio-economic variables that have been found to be associated with differentials in health and mortality, education is among the strongest and the most consistent. Wherever the relationship has been examined, better-educated people and their family members appear to stay healthier and to live longer lives. For example, in many developing countries, the better educated have greater knowledge of how to prevent HIV infection.**

- **In the more developed regions, education differentials in adult health and mortality are well documented. Evidence suggests that education differentials in mortality within developed countries are widening as better-educated persons increase their relative survival advantage over the poorly educated.**

- **In developing countries, studies have shown that those with less education have: higher maternal mortality, children with higher under-five mortality, less knowledge of key health interventions, lower levels of immunization coverage, and lower nutritional status. Access to proper care during pregnancy and delivery is also sharply differentiated by the level of a woman's education.**

- **HIV/AIDS is a threat to the survival of education systems in many high-prevalence developing countries. High levels of teacher attrition and absenteeism because of HIV/AIDS-related illness challenge the education systems of such countries. The epidemic inflicts heavy burdens on students and their families, often resulting in declining school enrolments and increasing dropout rates. As education systems are weakened by the HIV/AIDS epidemic, teaching and learning are becoming less effective for large segments of the populations of a growing number of developing countries.**

116. **International migration:**

- **Education is increasingly being taken into consideration as a key characteristic by countries that apply admission and residence criteria for immigration. This has long been the case among the traditional countries of immigration (Australia, Canada, New Zealand and the United States). As a result, these countries attract more educated migrants than receiving countries in Europe. However, since the second half of the 1990s, European and other receiving countries have also been enacting legislation placing emphasis on migrants' skills.**

- **The educational attainment of migrants varies widely depending on their region or country of origin. The distance between origin and destination, the reasons for migration and the age structure of different groups of migrants are some of the determinants of the differences observed.**

- **Increasingly, student migration has paved a way for a migrant workforce or for permanent settlement. Migrants educated in the host country might be at an advantage in finding employment locally. In some cases, student migration is used as a channel for clandestine labour migration. As recruitment of highly skilled professionals has become competitive, foreign students, especially those in science and technology, are being seen as part of a qualified migrant workforce.**

- **Recent years have witnessed an increased international mobility of students. The stock of international students is concentrated mostly in developed countries. The United States, the United Kingdom, Germany and France are the leading destinations for people seeking education abroad.**

- **Foreign students come to study from a wide variety of countries that often have geographical, historical and institutional linkages with host countries. Countries in Africa, Asia and Europe mostly attract students within their respective regions, playing the role of regional hub for higher education. A preponderance of Asian students has been a characteristic of student migration to Australia and the United States.**

117. **In sum, it is abundantly clear that education plays a key role in national development, besides being a prime component of individual well-being. Through education, individuals are empowered to have choices and make decisions, in such areas as work, place of residence, family size, health, lifestyle, and personal development. When aggregated, all these individual choices and decisions have dramatic consequences for a population. As the Secretary-General recently stated, "without the full development of a country's human resources, development will not take root, and economic growth will not be sustained" for "educated individuals are far more able to contribute to the well-being and advancement of their societies" (Dubai Strategy Forum, 28 October 2002).**[5]

Notes

[1] General Assembly resolution 217 A (III).

[2] See General Assembly resolution 55/2.

[3] *Report of the International Conference on Population and Development, Cairo, 5-13 September 1994* (United Nations publication, Sales No. E.95.XIII.18), chap. I, resolution 1, annex.

[4] General Assembly resolution S-21/2, annex.

[5] http://www.un.org/apps/sg/sgstats.asp?nid=130 (accessed on 24 January 2003).

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